

### **REMARKS**

Claims 1, 11, 12, 18 and 22 have been amended. No claims have been added or canceled. With entry of this amendment, claims 1-24 will be pending.

Support for the amendment to claims 1, 18 and 22 is found at least at page 6, lines 15-18. Claims 11 and 12 have been rewritten to be in independent form. No new matter has been added.

The rejection of claims 1-21 under 35 U.S.C. § 112, second paragraph was withdrawn. The terminal disclaimer submitted to overcome a non-statutory obviousness-type double patenting rejection was accepted. Claims 1-24 stand rejected as being anticipated under 35 U.S.C. § 102(b) by and obvious under 35 U.S.C. § 103(a) over Zikeli (U.S. Patent No. 5,607,639). Claims 1-22 stand rejected as obvious under 35 U.S.C. § 103(a) as unpatentable over Graveson (WO 96/21758 A1).

### **Examiner Interview**

During a November 15, 2006 telephonic interview, the undersigned and attorney Lynda Fitzpatrick discussed the application with the Examiner. Applicants wish to thank the Examiner for the courtesy of his time and attention to this application.

During the interview, Applicants' attorneys discussed with the Examiner that the cited prior art fails to disclose a shielding zone recited by claims 1-24. The Examiner suggested amending the claims to clarify the shielding zone. Applicants were also invited to submit a declaration from inventor Stefan Zikeli, who is also the first-named inventor listed on U.S. Patent No. 5,607,639. Applicants submit herewith the Declaration of Stefan Zikeli under 37 C.F.R. § 1.131 ("the Declaration").

### **Independent Claim 1**

Independent claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Zikeli. Claim 1 recites: "Apparatus for producing continuously molded bodies from a molding material, comprising a multitude of extrusion orifices through which during operation the molding material can be extruded into continuously molded bodies, a precipitation bath and an air gap arranged between the extrusion orifices and the precipitation bath, the continuously molded bodies being passed during operation in successive order through the air gap and the

precipitation bath, and a gas stream being directed in the area of the air gap to the continuously molded bodies, wherein the air gap directly after extrusion comprises a shielding zone and a cooling area separated from the extrusion orifices by the shielding zone, the cooling area being defined by the gas stream-designed as the cooling gas stream.”

The Manual of Patent Examining Procedure “MPEP” states that, in order to anticipate a claim, a single reference must teach every element of the claim:

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).”  
See MPEP § 2131

Zikeli does not teach claim 1’s air gap comprising “a shielding zone and a cooling area separated from the extrusion orifices by the shielding zone, the shielding zone preventing a cooling of the extrusion orifices.” Nowhere in Figure 1, or indeed anywhere in Zikeli, is an air gap comprising a shielding zone preventing a cooling of the extrusion orifices disclosed. Rather, Zikeli discloses that the device “is characterized in that immediately below the extrusion orifice a cooling gas inlet is provided for cooling the extruded sheet.” (Column 2, lines 25-27, emphasis added). Moreover, Zikeli discloses that “[t]he inlet for cooling gas is most preferably designed such that cooling gas is directed at the outlet edge of the extrusion orifice.” (Column 2, lines 57-59).

Zikeli also does not teach claim 1’s “multitude of extrusion orifices through which during operation the molding material is extruded into continuously molded bodies.” Rather, Zikeli discloses that the device “comprises an extrusion die with an extrusion orifice” for the preparation of a cellulose sheet or, using a ring-shaped orifice, a cellulose tubular film. (Column 2, lines 23-25 and 39-42).

Applicants respectfully submit that Zikeli therefore fails to disclose each and every element of claim 1, and does not anticipate claim 1.

Independent claim 1 stands rejected under 35 U.S.C. §103 (a) as being obvious over Zikeli.

A *prima facie* case of obviousness requires: (1) some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) a reasonable expectation of

success; and (3) the art reference or combination of references must teach all of the claim limitations (MPEP 2142). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicants' disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (MPEP 2143).

First, Zikeli does not teach or suggest each element of claim 1. The Examiner concedes that "Zikeli et al do not explicitly teach the aspect of a shielding zone." Again, Zikeli does not teach or suggest a shielding zone and a cooling area separated from the extrusion orifices by the shielding zone, the shielding zone preventing a cooling of the extrusion orifices, as recited in amended claim 1. Rather, as previously discussed, Zikeli teaches that the device "comprises an extrusion die with an extrusion orifice and is characterized in that immediately below the extrusion orifice a cooling gas inlet is provided for cooling the extruded sheet." (Column 2, lines 25-27, emphasis added). During the extrusion process of Zikeli "the heated extruded solution is cooled by exposure to a gas stream immediately after extrusion." (Column 3, lines 11-13, emphasis added).

In further support of the patentability of the pending claims, Applicants bring the Declaration to the Examiner's attention. Again, Stefan Zikeli is the first-named inventor of the Zikeli patent, and the present application. Exhibit A of the Declaration shows "arrows added by annotation at 5, which show that the flow pattern generated by the cooling gas stream impinges on the extruded cellulose sheet, and is deflected up onto the extrusion orifice and down in the direction of extrusion. This deflection occurs because the cooling gas stream cannot penetrate into the cellulose sheet. A similar deflection would occur with the extruded cellulose tube." (See Declaration of Stefan Zikeli at 4 and Exhibit A). "There is therefore no shielding zone between the cooling gas stream and the orifice opening in Zikeli, because the flow of the cooling gas impinges onto the cellulose sheet and is directed right onto the extrusion orifices." (See Declaration of Stefan Zikeli at 4).

Moreover, rather than the claimed shielding zone that prevents a cooling of the extrusion orifices, Zikeli teaches that "[t]he inlet for cooling gas is most preferably designed such that cooling gas is directed at the outlet edge of the extrusion orifice" (column 2, lines 57-59), and that "a metal guide 14 ensures that part of the cooling air directly strikes the outlet edge of the extrusion orifice." (Column 5, lines 5-7). Zikeli also discloses that "the cool extruded product is drawn through an air-gap." (Column 3, lines 57-58). Therefore, according to Zikeli, the extruded

solution is cooled as soon as it leaves the extrusion orifice, even before entering the air-gap. Therefore, Zikeli does not teach or suggest a “cooling area separated from the extrusion orifices by the shielding zone.” Accordingly, no *prima facie* case of obviousness with respect to claim 1 has been established.

Zikeli also does not teach or suggest claim 1’s “multitude of extrusion orifices through which during operation the molding material is extruded into continuously molded bodies.” Rather, Zikeli discloses that the device “comprises an extrusion die with an extrusion orifice” for the preparation of a cellulose sheet or, using a ring-shaped orifice, a cellulose tubular film. (Column 2, lines 23-25 and 39-42). The extrusion of continuously molded bodies through multiple extrusion orifices is not taught or suggested by Zikeli, not least because of the challenges of preventing continuously molded bodies from conglomerating.

Second, Zikeli provides no motivation for one of skill in the art to modify its teachings to include a shielding zone that prevents a cooling of the extrusion orifices. Indeed, far from providing such motivation, Zikeli discloses that “[t]he inlet for cooling gas is most preferably designed such that cooling gas is directed at the outlet edge of the extrusion orifice.” (Column 2, lines 57-59). Zikeli provides no motivation whatsoever for one of skill in the art to extrude cellulose through a multitude of extrusion orifices, and at the same time, introduce a shielding zone to prevent a cooling of the extrusion orifices. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 1.

Third, given not only the absence of motivation to modify Zikeli, but also the emphasis placed by Zikeli on the cooling gas inlet being immediately below the extrusion orifice, the extruded solution being cool before entering the air-gap, and that the cooling gas be most preferably directed at the outlet edge of the extrusion orifice, one of skill in the art would not have a reasonable expectation that a shielding zone could be successfully incorporated into the apparatus as recited in claim 1. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 1.

Therefore, withdrawal of the 103 rejection over Zikeli is respectfully requested.

Independent claim 1 stands rejected under 35 U.S.C. §103 (a) as obvious over Graveson. The requirements to establish a *prima facie* case of obviousness has been discussed above.

First, Graveson does not teach or suggest each element of claim 1. Graveson discloses a method of manufacturing cellulose by extruding cellulose into an air gap that has two regions, the first region being maintained at a lower moisture content than the second. (Abstract).

Graveson discloses that the “first region [is] adjacent the face of the die,” (page 2, lines 4-10, emphasis added), whereas the second region is situated “between the first region 9 and the precipitation bath.” (Page 6, lines 28-29).

In order to maintain the temperature and humidity of the atmosphere in the “first region 9 adjacent the spinnerette 2” of Graveson, a first supply of air is blown into the air gap from a blowing nozzle. (Page 6, lines 15-23, emphasis added). Graveson, therefore, does not teach or suggest claim 1’s shielding zone. In the examples, Graveson maintains the temperature of the blown air in the upper region at 20°C or 30°C in all experiments (see Tables 1 and 2, and page 13, line 8), whereas the temperature of the spinnerette head was 115°C. (Page 9, lines 29-30). Therefore, throughout the first region, i.e., from the extrusion head to the second region, a temperature of 20°C or 30°C was obtained by blowing air, which would cool the extrusion orifices of the spinnerette head. Graveson therefore does not teach or suggest claim 1’s shielding zone that prevents a cooling of the extrusion orifices. Applicants respectfully submit that the Examiner’s interpretation of the figure of Graveson as implying a shielding zone contradicts the teachings of this reference, which requires maintaining different levels of humidity in two regions of the air gap. Applicants can only conclude that by inferring a shielding zone in the Figure, the Examiner has used Applicants’ invention as a template and relied on impermissible hindsight to arrive at the claimed invention. However, the reference must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention. (MPEP § 2141).

Regarding the function of the shielding zone, Applicants disclose that “the shielding zone [...] prevents a cooling of the extrusion orifices and thus a negative effect on the extrusion process at the extrusion orifices.” (Page 6, lines 15-18). Specifically, “[t]he shielding zone [...] avoids an action of the cooling gas stream in the anisotropic expansion zone [of the continuously molded bodies], which action is detrimental to the characteristics of the fibers.” (Page 7, lines 1-9). Furthermore, Applicants’ specification indicates that “[t]he tensile force which effects the stretching of the continuously molded bodies only becomes effective behind said expansion zone,” and that “the cooling action seems to start when the tensile force acts on the continuously molded bodies and effects a gradual molecular alignment of the continuously molded bodies.” (Page 7, lines 1-9). Graveson provides no teaching or suggestion to include a shielding zone preventing a cooling of the extrusion orifices, or that such a shielding zone preventing a cooling of the extrusion orifices would provide any advantages to the spinning process. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 1.

Second, Graveson provides no motivation for one of skill in the art to modify its apparatus to include a shielding zone. The Examiner asserts that “the elimination of an element (i.e., blowing nozzle 7 and suction nozzle 8) and its function (e.g., longer air gap) would have been obvious to one of ordinary skill in the art ... if the function is not desired.” (Office action of January 25, 2006, page 6, part 12). The Examiner has not, however, indicated where any such motivation to modify Graveson can be found, either in the teachings of Graveson itself, or in the knowledge generally available to one of ordinary skill in the art. In fact, such a measure would require one of skill in the art to disregard the teachings of Graveson, which requires two blowing nozzles to provide two different climatic conditions in the air gap for improved spinning. It is, therefore, the essence of Graveson’s invention that the “air-gap comprises a first region adjacent the face of the die and the second region remote from the face of the die.” (See claim 1).

The Examiner further asserts that “the length of the air gap could be shortened, which would result in, among other things, a more stable process.” (Office action of January 25, 2006, page 6, part 12), but provides no basis or support for this assertion. Moreover, it is not clear to Applicants how a shortening of the air gap teaches or suggests each element of amended claim 1.

Accordingly, no *prima facie* case of obviousness has been established with respect to claim 1.

Third, one of skill in the art would not have a reasonable expectation that a shielding zone could be successfully incorporated into the apparatus as recited in claim 1, not least because Graveson provides no motivation or suggestion to include such a feature. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 1.

Therefore, withdrawal of the 103 rejection over Graveson is respectfully requested.

In view of the foregoing, allowance of claim 1 is respectfully requested.

#### **Dependent Claims 2-10 and 13-17 and 23**

Claims 2-10, 13-17 and 23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Zikeli, as obvious under 35 U.S.C. § 103(a) over Zikeli, and as obvious under 35 U.S.C. § 103(a) over Graveson. Claims 2-10, 13-17 and 23 depend from allowable claim 1, and are therefore allowable. Claims 2-10, 13-17 and 23 may contain additional patentable subject matter for reasons that may not be discussed herein. Allowance of these claims is respectfully requested.

### **Independent Claim 11**

Claim 11 has been rewritten in independent form and recites each of the features of previously pending claim 1 from which it depended.

For the same and similar reasons set forth above with respect to claim 1, Zikeli does not disclose a shielding zone or a multitude of extrusion orifices.

Furthermore, claim 11 recites that “the cooling gas stream has a velocity component oriented into the direction of passage.” In attempting to respond to arguments made in the previous response, the Examiner declares that “these claimed features [of dependent claim 11] are ... disclosed by ... Zikeli,” but does not indicate where Zikeli discloses a cooling gas stream having a velocity component oriented into the direction of passage. The Examiner is reminded that “[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it.” (MPEP 707.07(f)). In fact, Zikeli does not teach or suggest a cooling gas stream oriented in the direction of passage, but rather discloses to direct the gas stream essentially at right angles to the direction of extrusion. (Column 3, lines 14-16 and claim 1; emphasis added). Accordingly, Zikeli does not anticipate claim 11.

Claim 11, is also not obvious over Zikeli. Zikeli does not teach or suggest a shielding zone, a multitude of extrusion orifices, or a cooling gas stream oriented in the direction of passage for the reasons set forth above.

Moreover, Zikeli provides no motivation to modify its teachings. Rather, Zikeli teaches that “[i]t has proved to be especially effective when the gas stream is essentially at right angles to the direction of extrusion.” (Column 3, lines 14-16; emphasis added). One of skill in the art would not be motivated to modify Zikeli to include a shielding zone, a multitude of extrusion orifices and at the same time provide a cooling gas stream oriented in the direction of passage. Furthermore, with no motivation to modify Zikeli, one skilled in the art would not reasonably expect the modification to succeed. Accordingly, a *prima facie* case of obviousness has not been established.

Claim 11 is also not obvious over Graveson. For the same and similar reasons set forth above with respect to claim 1, Graveson does not teach or suggest a shielding zone or a multitude of extrusion orifices.

Furthermore, Graveson does not teach or suggest a cooling gas stream oriented in the direction of passage. Again, the Examiner declares “these claimed features [of dependent claim

11] ... would have been obvious to one ordinary skill in the art at the time the invention was made in view of ... Graveson et al.” without providing any basis for the assertion. In fact, Graveson does not teach or suggest a cooling gas stream oriented in the direction of passage. Rather Graveson discloses that “[a]ir is preferably supplied to and extracted from the air-gap in a direction substantially transverse to the direction of travel of the dope extrudate through the air-gap, that is to say horizontally when using such conventional extrusion techniques. In such a transverse arrangement, the current of air flowing across the air-gap may conveniently be referred to as a cross-draft.” (Page 3, lines 2-8; emphasis added).

Moreover, Graveson provides no motivation to modify its teachings. Rather than providing a cooling gas stream oriented in the direction of passage, Graveson discloses that “[a]ir is preferably supplied to and extracted from the air-gap in a direction substantially transverse to the direction of travel of the dope extrudate through the air-gap.” (Page 3, lines 2-4; emphasis added). One of skill in the art would not be motivated to modify Graveson to include a shielding zone and at the same time provide a cooling gas stream oriented in the direction of passage. Furthermore, with no motivation to modify Graveson, one skilled in the art would not reasonably expect the modification to succeed. Accordingly, a *prima facie* case of obviousness has not been established for claim 11.

Therefore allowance of claim 11 is respectfully requested.

### **Independent Claim 12**

Claim 12 has been rewritten in independent form and recites each of the features of previously pending claim 1 from which it depended.

For the same and similar reasons set forth above with respect to claim 1, Zikeli does not disclose a shielding zone or a multitude of extrusion orifices,

Furthermore, claim 12 recites that “the inclination ( $\beta$ ) of the cooling gas stream in the direction of passage is greater than the expansion ( $\gamma$ ) of the cooling gas stream.” In attempting to respond to arguments made in the previous response, the Examiner declares that “these claimed features [of dependent claim 12] are ... disclosed by ... Zikeli,” but does not indicate where Zikeli discloses the feature of claim 12 of the inclination of the cooling gas stream in the direction of passage is greater than the expansion of the cooling gas stream. The Examiner is reminded that “[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it.”



(MPEP 707.07(f)). In fact, Zikeli does not teach or suggest the inclination of the cooling gas stream in the direction of passage is greater than the expansion of the cooling gas stream,” but rather discloses to direct the gas stream essentially at right angles to the direction of extrusion. Column 3, lines 14-16 and claim 1 (emphasis added). Accordingly, Zikeli does not anticipate claim 12.

Claim 12 is also not obvious over Zikeli. Zikeli does not teach or suggest a shielding zone or a multitude of extrusion orifices, or “the inclination ( $\beta$ ) of the cooling gas stream in the direction of passage is greater than the expansion ( $\gamma$ ) of the cooling gas stream” for the reasons set forth above.

Moreover, Zikeli provides no motivation to modify its teachings. Rather than motivating one of skill in the art to provide an inclination of the cooling gas stream in the direction of passage being greater than the expansion of the cooling gas stream, Zikeli discloses that “[i]t has proved to be especially effective when the gas stream is essentially at right angles to the direction of extrusion.” (Column 3, lines 14-16; emphasis added). One of skill in the art would not be motivated to modify Zikeli to include a shielding zone, a multitude of extrusion orifices and, at the same time, provide the inclination of the cooling gas stream in the direction of passage being greater than the expansion of the cooling gas stream. Furthermore, with no motivation to modify Zikeli, one skilled in the art would not reasonably expect the modification to succeed. Accordingly, a *prima facie* case of obviousness has not been established.

Claim 12 is also not obvious over Graveson. For the same and similar reasons set forth above with respect to claim 1, Graveson does not teach or suggest a shielding zone or a multitude of extrusion orifices,

Furthermore, Graveson does not teach or suggest claim 12’s “the inclination ( $\beta$ ) of the cooling gas stream in the direction of passage is greater than the expansion ( $\gamma$ ) of the cooling gas stream.” Again, the Examiner declares “these claimed features [of dependent claim 12] ... would have been obvious to one ordinary skill in the art at the time the invention was made in view of ... Graveson et al.” without providing any basis for the assertion. In fact, Graveson does not teach or suggest claim 12’s inclination of the cooling gas stream in the direction of passage being greater than the expansion of the cooling gas stream. Rather, Graveson discloses that “[a]ir is preferably supplied to and extracted from the air-gap in a direction substantially transverse to the direction of travel of the dope extrudate through the air-gap, that is to say horizontally when using such conventional extrusion techniques. In such a transverse arrangement, the current of

air flowing across the air-gap may conveniently be referred to as a cross-draft.” Page 3, lines 2-8 (emphasis added).

Moreover, Graveson provides no motivation to modify its teachings. Rather than motivating one of skill in the art to provide an inclination of the cooling gas stream in the direction of passage being greater than the expansion of the cooling gas stream, Graveson discloses that “[a]ir is preferably supplied to and extracted from the air-gap in a direction substantially transverse to the direction of travel of the dope extrudate through the air-gap.” (Page 3, lines 2-4; emphasis added). One of skill in the art would not be motivated to modify Graveson to include a shielding zone and at the same time provide the inclination of the cooling gas stream in the direction of passage being greater than the expansion of the cooling gas stream. Furthermore, with no motivation to modify Graveson, one skilled in the art would not reasonably expect the modification to succeed. Accordingly, a *prima facie* case of obviousness has not been established for claim 12.

Therefore allowance of claim 12 is respectfully requested.

### **Independent Claim 18**

Independent claim 18 stands rejected under 35 U.S.C. § 102 as being anticipated by Zikeli. Amended claim 18 recites: “A method for producing continuously molded bodies from a molding material, the molding material being first extruded through a multitude of extrusion orifices to obtain continuously molded bodies, the continuously molded bodies being then passed through an air gap and stretched in said air gap and blown at with a gas stream, and the continuously molded bodies being then guided through a precipitation bath, wherein the continuously molded bodies in the air gap are first passed through a shielding zone and then through a cooling area, the shielding zone preventing a cooling of the extrusion orifices, and the blowing operation being performed in the cooling area by means of the gas stream designed as the cooling gas stream.”

The requirements to establish anticipation are set forth above for claim 1. Zikeli does not teach the claimed method for producing continuously molded bodies, the molding material being first extruded through a multitude of extrusion orifices comprising first passing the bodies through a shielding zone and then through a cooling area. As discussed above for claim 1, Zikeli does not teach a multitude of extrusion orifices or shielding zone. Rather, Zikeli discloses an extrusion process in which “the heated extruded solution is cooled by exposure to a gas stream

immediately after extrusion.” (Column 3, lines 11-13, emphasis added). Also, as discussed above for claim 1, “the flow pattern generated by the cooling gas stream impinges on the extruded cellulose sheet, and is deflected up onto the extrusion orifice and down in the direction of extrusion.” (See Declaration of Stefan Zikeli at 4 and Exhibit A). Applicants respectfully submit that Zikeli, therefore, fails to disclose each and every element of claim 18, and does not anticipate claim 18. Accordingly, Zikeli does not anticipate claim 18.

Independent claim 18 is also not obvious over Zikeli. Zikeli does not teach or suggest a method comprising passing continuously molded bodies through a shielding zone as recited in claim 18. Rather, as discussed above, Zikeli teaches that the device for molding bodies “comprises an extrusion die with an extrusion orifice and is characterized in that immediately below the extrusion orifice a cooling gas inlet is provided for cooling the extruded sheet.” (Column 2, lines 25-27, emphasis added).

Furthermore, rather than claim 18’s shielding zone that prevents a cooling of the extrusion orifices, Zikeli discloses that “[t]he inlet for cooling gas is most preferably designed such that cooling gas is directed at the outlet edge of the extrusion orifice,” (column 2, lines 57-59), and that “a metal guide 14 ensures that part of the cooling air directly strikes the outlet edge of the extrusion orifice.” (Column 5, lines 5-7). Zikeli also discloses that “the cool extruded product is drawn through an air-gap.” (Column 3, lines 57-58). Therefore, according to Zikeli, the extruded solution is cooled as soon as it leaves the extrusion orifice, even before entering the air-gap. Therefore, Zikeli does not teach or suggest a “cooling area separated from the extrusion orifices by the shielding zone.” Accordingly no *prima facie* case of obviousness with respect to claim 18 has been established.

Zikeli also does not teach or suggest claim 18’s molding material being first extruded through a multitude of extrusion orifices. Rather, Zikeli discloses a device which “comprises an extrusion die with an extrusion orifice” for the preparation of a cellulose sheet or, using a ring-shaped orifice, a cellulose tubular film. (Column 2, lines 23-25 and 39-42). The extrusion of continuously molded bodies through multiple extrusion orifices is not taught or suggested by Zikeli, not least because of the additional challenges of preventing the continuously molded bodies from conglomerating.

Second, Zikeli provides no motivation for one of skill in the art to modify its teachings to include a shielding zone that prevents a cooling of the extrusion orifices. Indeed, far from

providing such motivation, Zikeli discloses that “[t]he inlet for cooling gas is most preferably designed such that cooling gas is directed at the outlet edge of the extrusion orifice.” (Column 2, lines 57-59). One of skill in the art would not be motivated to extrude cellulose through a multitude of extrusion orifices, and at the same time, introduce a shielding zone to prevent a cooling of the extrusion orifices. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 18.

Third, given not only the absence of motivation to modify Zikeli, but also the emphasis placed by Zikeli on the cooling gas inlet being immediately below the extrusion orifice, the extruded solution being cool before entering the air-gap, and that the cooling gas be most preferably directed at the outlet edge of the extrusion orifice, one of skill in the art would not have a reasonable expectation that a shielding zone could be successfully incorporated into the method as recited in claim 18. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 18. Therefore, withdrawal of the 103 rejection over Zikeli is respectfully requested.

Independent claim 18 stands rejected under 35 U.S.C. §103 (a) as obvious over Graveson. The requirement to establish a *prima facie* case of obviousness has been discussed above.

First, Graveson does not teach or suggest each element of the claim 18. As discussed above, Graveson discloses a method of manufacturing cellulose by extruding cellulose into an air gap that has two regions, the first region being maintained at a lower moisture content than the second. (Abstract). Graveson discloses that the “first region [is] adjacent the face of the die,” (page 2, lines 4-10; emphasis added), whereas the second region is situated “between the first region 9 and the precipitation bath.” (Page 6, lines 28-29).

As previously discussed, in order to maintain the temperature and humidity of the atmosphere in the “first region 9 adjacent the spinnerette 2” of Graveson a first supply of air is blown into the air gap from a blowing nozzle. (Page 6, lines 15-23; emphasis added). Graveson, therefore, does not teach or suggest claim 18’s shielding zone. In the examples, the temperature of the blown air in the upper region was maintained at 20°C or 30°C in all experiments (see Tables 1 and 2, and page 13, line 8), whereas the temperature of the spinnerette head was 115°C (page 9, lines 29-30). Therefore, throughout the first region, i.e., from the extrusion head to the second region, a temperature of 20°C or 30°C was obtained by blowing air, which would cool

the extrusion orifices of the spinnerette head. Graveson therefore does not teach or suggest claim 18's shielding zone that prevents a cooling of the extrusion orifices. Applicants respectfully submit that the Examiner's interpretation of the figure of Graveson as implying a shielding zone contradicts the teachings of this reference, which requires maintaining different levels of humidity in two regions of the air gap. Applicants can only conclude that by inferring a shielding zone in the Figure, the Examiner has used Applicants' invention as a template and relied on impermissible hindsight to arrive at the claimed invention. However, the reference must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention. (MPEP § 2141).

The possible function of the shielding zone is discussed above for claim 1. Graveson provides no teaching or suggestion to include a shielding zone preventing a cooling of the extrusion orifices, or that such a shielding zone would provide any advantages to the spinning process. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 18.

Second, Graveson provides no motivation for one of skill in the art to modify its methods to include a shielding zone. The Examiner asserts that "the elimination of an element (i.e., blowing nozzle 7 and suction nozzle 8) and its function (e.g., longer air gap) would have been obvious to one of ordinary skill in the art ... if the function is not desired." (Office action of January 25, 2006, page 6, part 12). The Examiner has not indicated, however, where any such motivation to modify Graveson can be found, either in the teachings of Graveson itself, or in the knowledge generally available to one of ordinary skill in the art. In fact, such a measure would require one of skill in the art to disregard the teachings of Graveson, which requires two blowing nozzles to provide two different climatic conditions in the air gap for improved spinning. It is, therefore, the essence of Graveson's invention that the "air-gap comprises a first region adjacent the face of the die and the second region remote from the face of the die." (See claim 1).

The Examiner further asserts that "the length of the air gap could be shortened, which would result in, among other things, a more stable process," (Office action of January 25, 2006, page 6, part 12), but provides no basis or support for this assertion. Moreover, it is not clear to Applicants how a shortening of the air gap teaches or suggests each element of amended claim 18.

Accordingly, no *prima facie* case of obviousness has been established with respect to claim 18.

Third, one of skill in the art would not have a reasonable expectation that a shielding zone could be successfully incorporated into the method of claim 18, not least because Graveson provides no motivation to include such a feature. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 18. Therefore, withdrawal of the 103 rejection over Graveson is respectfully requested.

In view of the foregoing, allowance of claim 18 is respectfully requested.

#### **Dependent Claims 19-21 and 24**

Claims 19-21 and 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Zikeli, as obvious under 35 U.S.C. § 103(a) over Zikeli, and as obvious under 35 U.S.C. § 103(a) over Graveson. Claims 19-21 and 24 depend from allowable claim 18, and are therefore allowable. Claims 19-21 and 24 may contain additional patentable subject matter for reasons that may not be discussed herein. Allowance of claims 19-21 and 24 is respectfully requested.

#### **Independent Claim 22**

Independent claim 22 stands rejected under 35 U.S.C. § 102 as being anticipated by Zikeli. Amended claim 22 recites: "A method for reducing the surface tackiness of a molding material during molding, comprising: (a) extruding the molding material through a multitude of extrusion orifices to obtain continuously molded bodies; (b) stretching the continuously molded bodies through an air gap, the air gap comprising a shielding zone and a cooling area, wherein the shielding zone prevents a cooling of the extrusion orifices, and the continuously molded bodies are blown at with a cooling gas stream in the cooling area, thereby reducing the surface tackiness of the molding material; and (c) guiding the continuously molded bodies through a precipitation bath."

The requirements to establish anticipation are set forth above for claim 1. Zikeli does not teach the claimed method for reducing the surface tackiness of a molding material during molding, by extruding the molding material through a multitude of extrusion orifices to obtain continuously molded bodies and stretching the bodies through an air gap, the air gap comprising a shielding zone and a cooling area. As discussed above for claim 1, Zikeli does not teach a multitude of extrusion orifices or shielding zone. Rather, Zikeli discloses an extrusion process in which "the heated extruded solution is cooled by exposure to a gas stream immediately after

extrusion.” (Column 3, lines 11-13, emphasis added). Also, as discussed above for claim 1, “the flow pattern generated by the cooling gas stream impinges on the extruded cellulose sheet, and is deflected up onto the extrusion orifice and down in the direction of extrusion.” (See Declaration of Stefan Zikeli at 4 and Exhibit A). Applicants respectfully submit that Zikeli, therefore, fails to disclose each and every element of claim 22, and does not anticipate claim 22. Accordingly, Zikeli does not anticipate claim 22.

Independent claim 22 is also not obvious over Zikeli. Zikeli does not teach or suggest claim 22’s method for reducing the surface tackiness of a molding material during molding, by extruding the molding material through a multitude of extrusion orifices to obtain continuously molded bodies and stretching the bodies through an air gap, the air gap comprising a shielding zone and a cooling area. Rather, as discussed above, Zikeli teaches that the device for molding bodies “comprises an extrusion die with an extrusion orifice and is characterized in that immediately below the extrusion orifice a cooling gas inlet is provided for cooling the extruded sheet.” (Column 2, lines 25-27, emphasis added).

Furthermore, rather than claim 22’s shielding zone that prevents a cooling of the extrusion orifices, Zikeli discloses that “[t]he inlet for cooling gas is most preferably designed such that cooling gas is directed at the outlet edge of the extrusion orifice,” (column 2, lines 57-59), and that “a metal guide 14 ensures that part of the cooling air directly strikes the outlet edge of the extrusion orifice.” (Column 5, lines 5-7). Zikeli also discloses that “the cool extruded product is drawn through an air-gap.” (Column 3, lines 57-58). Therefore, according to Zikeli, the extruded solution is cooled as soon as it leaves the extrusion orifice, even before entering the air-gap. Therefore, Zikeli does not teach or suggest a “cooling area separated from the extrusion orifices by the shielding zone.” Accordingly no *prima facie* case of obviousness with respect to claim 22 has been established.

Zikeli also does not teach or suggest extruding the molding material through a multitude of extrusion orifices as recited in claim 22. Rather, Zikeli discloses a device which “comprises an extrusion die with an extrusion orifice” for the preparation of a cellulose sheet or, using a ring-shaped orifice, a cellulose tubular film. (Column 2, lines 23-25 and 39-42). The extrusion of continuously molded bodies through multiple extrusion orifices is not taught or suggested by Zikeli, not least because of the additional challenges of preventing the continuously molded bodies from conglomerating.

Second, Zikeli provides no motivation for one of skill in the art to modify its teachings to include a shielding zone that prevents a cooling of the extrusion orifices. Indeed, far from providing such motivation, Zikeli discloses that “[t]he inlet for cooling gas is most preferably designed such that cooling gas is directed at the outlet edge of the extrusion orifice.” (Column 2, lines 57-59). One of skill in the art would not be motivated to reduce the surface tackiness of a molding material by extruding cellulose through a multitude of extrusion orifices, and at the same time, introduce a shielding zone to prevent a cooling of the extrusion orifices. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 22.

Third, given not only the absence of motivation to modify Zikeli, but also the emphasis placed by Zikeli on the cooling gas inlet being immediately below the extrusion orifice, the extruded solution being cool before entering the air-gap, and that the cooling gas be most preferably directed at the outlet edge of the extrusion orifice, one of skill in the art would not have a reasonable expectation that a shielding zone could be successfully incorporated into the method as recited in claim 22. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 22. Therefore, withdrawal of the 103 rejection over Zikeli is respectfully requested.

Independent claim 22 stands rejected under 35 U.S.C. §103 (a) as obvious over Graveson. The requirement to establish a *prima facie* case of obviousness has been discussed above.

First, Graveson does not teach or suggest each element of the claim 22. As discussed above, Graveson discloses a method of manufacturing cellulose by extruding cellulose into an air gap that has two regions, the first region being maintained at a lower moisture content than the second. (Abstract). Graveson discloses that the “first region [is] adjacent the face of the die,” (page 2, lines 4-10; emphasis added), whereas the second region is situated “between the first region 9 and the precipitation bath.” (Page 6, lines 28-29).

As previously discussed, in order to maintain the temperature and humidity of the atmosphere in the “first region 9 adjacent the spinnerette 2” of Graveson a first supply of air is blown into the air gap from a blowing nozzle. (Page 6, lines 15-23; emphasis added). Graveson, therefore, does not teach or suggest claim 22’s shielding zone. In the examples, the temperature of the blown air in the upper region was maintained at 20°C or 30°C in all experiments (see Tables 1 and 2, and page 13, line 8), whereas the temperature of the spinnerette head was 115°C



(Page 9, lines 29-30). Therefore, throughout the first region, i.e., from the extrusion head to the second region, a temperature of 20°C or 30°C was obtained by blowing air, which would cool the extrusion orifices of the spinnerette head. Graveson therefore does not teach or suggest claim 22's shielding zone that prevents a cooling of the extrusion orifices. Applicants respectfully submit that the Examiner's interpretation of the figure of Graveson as implying a shielding zone contradicts the teachings of this reference, which requires maintaining different levels of humidity in two regions of the air gap. Applicants can only conclude that by inferring a shielding zone in the Figure, the Examiner has used Applicants' invention as a template and relied on impermissible hindsight to arrive at the claimed invention. However, the reference must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention. (MPEP § 2141).

The possible function of the shielding zone is discussed above for claim 1. Graveson provides no teaching or suggestion to include a shielding zone preventing a cooling of the extrusion orifices, or that such a shielding zone would provide any advantages to the spinning process. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 22.

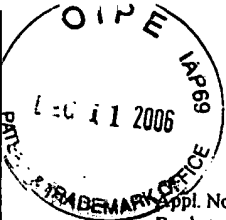
Second, Graveson provides no motivation for one of skill in the art to modify its methods to include a shielding zone. The Examiner asserts that "the elimination of an element (i.e., blowing nozzle 7 and suction nozzle 8) and its function (e.g., longer air gap) would have been obvious to one of ordinary skill in the art ... if the function is not desired." (Office action of January 25, 2006, page 6, part 12). The Examiner has not indicated, however, where any such motivation to modify Graveson can be found, either in the teachings of Graveson itself, or in the knowledge generally available to one of ordinary skill in the art. In fact, such a measure would require one of skill in the art to disregard the teachings of Graveson, which requires two blowing nozzles to provide two different climatic conditions in the air gap for improved spinning. It is, therefore, the essence of Graveson's invention that the "air-gap comprises a first region adjacent the face of the die and the second region remote from the face of the die." (See claim 1).

The Examiner further asserts that "the length of the air gap could be shortened, which would result in, among other things, a more stable process," (Office action of January 25, 2006, page 6, part 12), but provides no basis or support for this assertion. Moreover, it is not clear to Applicants how a shortening of the air gap teaches or suggests each element of amended claim 22.

Accordingly, no *prima facie* case of obviousness has been established with respect to claim 22.

Third, one of skill in the art would not have a reasonable expectation that a shielding zone could be successfully incorporated into the method of claim 22, not least because Graveson provides no motivation to include such a feature. Accordingly, no *prima facie* case of obviousness has been established with respect to claim 22. Therefore, withdrawal of the 103 rejection over Graveson is respectfully requested.

In view of the foregoing, allowance of claim 22 is respectfully requested.



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### CONCLUSION

In view of the foregoing, consideration and allowance of claims 1-24 are respectfully requested. The Examiner is strongly encouraged to contact the undersigned by telephone at the Examiner's convenience should any issues remain.

No additional fees are believed to be due in connection with this submission. However, if any additional fees are owed, please charge such fees to deposit account number 13-3080.

Respectfully submitted,

  
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